

ON THE GENUS *ELACHYOPHTHALMA* Feld.

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THE genus *Elachyophthalma* was established by Felder in 1861 for a species of the family *Bombycidae* from Amboina which he called *tricolor*. Felder placed the genus in the *Saturnidae* (*Attacidae*), although it struck him as very aberrant, for he says in the footnote to the generic diagnosis, "Genus ab omnibus *Saturniidis* jam habitu discrepans, *Ocinarae* Walker secundum alarum formam fortasse accedens."

Its right place in the system is in the *Bombycidae*, immediately following *Gunda* and *Ocinara*. The sexes are dimorphic and strangely different. The ♂♂ described in this article are described for the first time, **all the hitherto described** specimens being ♀♀.

The diagnosis of the genus, given by Felder, is as follows :

"Caput parvum, valde retractum. Oculi minimi. Antennae (♀ nae) breves, sat late pectinatae. Lingua nulla. Palpi minuti, caput aequantes. Alae breviter ciliatae, integerrimae, anticae apice obtusae, margine externo convexo, vena subcostali quinque-ramosa (ramo primo ad cellulae extimum oriente), vena discoidali secunda fere in medio venae discocellularis arcuatae oriente, ramis ultimis medianis approximatis, primo remotiore, posticae rotundatae, vena costali ad basin cum subcostali connata, dein costae valde approximata, post hujus medium desinente, vena subcostali longe post cellulae irregulariter clausae extimum ramificante, ramo tertio et secundo mediano valde approximatis. Pedes breves, setosi, tibiae posticorum calcaribus duobus apicalibus minutis. Abdomen (♀ nae) subrobustum, alis posticis dimidio fere brevius, ano subvillosa."

The synonymy of the genus is as follows :

Elachyophthalma Felder, *Ber. Kais. Ak. Wiss. Wien* (*Math.—N.W. Class*), vol. xliii. (I) (25-44), p. 32 (1861). Type *tricolor* Feld.

Laganda Walker, *List. Lepid. Ins. Brit. Mus.* part xxxii. p. 389 (1865). Type *picaria* Walk.

Diversosexus Bethune Baker, *Nov. Zool.* vol. xi. p. 402 (1904). Type *bicolor* B. Baker.

There are two sharply defined groups of species : 1st, with the ♀♀ more or less golden yellow, resembling in general facies the genus *Gunda*, and with the ♂ large with a diagonal orange band across the hindwings ; 2nd, with the ♀♀ black, white, and yellow, or black and white, or black and yellow, resembling certain groups of *Liparidae* and with the ♂ small and uniform brown. In the latter group must be ranged two aberrant species, of which only ♀♀ are known, of a rufous-brown colour and mimicking almost exactly some species of the *Eupherotid* genus *Cotana*. There are at present known 18 species, as follows :

1. *Elachyophthalma megaxantha* (Walk.).

Artaxa megaxantha Walker, *List Lepid. Ins. Brit. Mus.* part xxxv. p. 1913 (1866) (Batchian).

The type now in the Hope University Museum, Oxford, has remained unique.

2. *Elachyophthalma inturbida* (Walk.).

Leucoma inturbida Walker, *List Lepid. Ins. Brit. Mus.* part xxxii. p. 345 (1865) (Celebes).

This has also remained unique.

3. *Elachyophthalma kebeae* (B. Baker).

Gunda kebeae Bethune Baker, *Novit. Zool.* vol. xi. p. 370. No. 4. pl. iv. f. 32 (1904) (Mt. Kebea).

The series at Tring consists of 1 ♂ and 24 ♀♀. The ♂ was hitherto unknown.

♂. Pectus orange; legs orange-yellow varied with maroon-chocolate; antennae chocolate-brown, pectinations no longer than in ♀; head, thorax, and abdomen chocolate-brown.

Forewing maroon-chocolate-brown, disk sparingly sprinkled with yellowish hairlike scales, an indistinct antemedial, strongly zigzag shadow band; discocellular stigma lunate black-brown; a broad sinuate postmedian shadow band. Hindwing maroon-chocolate-brown, inner one-third sprinkled with yellow hair scales; a broad, oblique, wedge-shaped band of orange runs from base of wing to termen between veins 4 and 6; a trace of a sooty line crosses the orange before termen; the hindwing is very long and ovoid.

1 ♂, 1 ♀ Mt. Goliath, Central Dutch New Guinea, 5,000 ft., March 1911; 1 ♀ nr. Oetakwa River, Snow Mts., Dutch New Guinea, October—December 1910; 6 ♀♀ Kumusi River, N.E. British New Guinea, May 1907; 1 ♀ Good-enough Island, 2,500—4,000 ft., April 1913; 1 ♀ Milne Bay, British New Guinea, December 1898; 1 ♀ Lower Aroa River, British New Guinea, November 1904—March 1905; 1 ♀ Biagi Mambare River, N.W. British New Guinea, 5,000 ft., February 1906 (A. S. Meek coll.);—6 ♀♀ Hydrographer Mts., N. British New Guinea, 2,500 ft., March 1918 (Eichhorn Bros. coll.);—2 ♀♀ Dorey, Dutch New Guinea, June 1897; Kapour, S.W. Dutch New Guinea, January—February 1897; 2 ♀♀ Humboldt Bay, N. Coast Dutch New Guinea, September—October 1892 (W. Doherty coll.);—1 ♀ Ninay Valley, Central Arfak Mts., Dutch New Guinea, 3,500 ft., February—March 1909 (A. E. Pratt coll.).

The amount of dark scaling on the outer quarter of wings and the distinctness of the two transverse dark bands varies much in the ♀♀, and two of those from Kumusi River and one from the Hydrographer Mts. are practically pure yellow. The Dutch New Guinea ♀♀ appear to be generally smaller than the rest, but two British New Guinea ♀♀ are the smallest of all.

Length of forewing, ♂ 22 mm.; expanse, 47 mm.

4. *Elachyophthalma flava* (Joicey & Talbot).

Gunda kebeae flava Joicey & Talbot, *Trans. Entom. Soc. Lond.* 1916. p. 384 (Arfak Peninsula).

This is not a form of *kebeae* B. Baker, but a distinct species easily recognised by the brown apical area of the forewing and the cream-grey tornal area of hindwing.

5. *Elachyophthalma keiensis* sp. nov.

♀. Similar to *kebeae* but smaller, differs principally in having the legs golden yellow instead of sooty black, and in the first 3 rings of the abdomen being strongly suffused with yellow on the sides.

Length of forewing, 21 mm.; expanse, 47 mm.

Hab.: 3 ♀♀ Little Kei Island, March 1893 (H. Kühn coll.).

6. *Elachyophthalma flavolivacea* (Rothsch.).

Gunda flavolivacea Rothschild, *Brit. Ornith. Union & Woll. Exped., Lepid.* p. 101. no. 552 (1915)
(Utakwa River).

1 ♀, type, Canoe Camp, Utakwa River, Dutch New Guinea, October 1912 (A. F. R. Wollaston); 4 ♀♀ Upper Setekwa River, Snow Mts., Dutch New Guinea, 2,000—3,000 ft., August 1910 (A. S. Meek).

7. *Elachyophthalma dohertyi* sp. nov.

♀. Head, thorax, and abdomen golden yellow. Forewing canary-yellow, some irregular antemedian and cellular streaks, a postmedian line joining on to the oblique apical one-third, the apical one-third of wing, and the margin dull maroon-brown. Hindwings deep golden yellow.

Length of forewing, 17 mm.; expanse, 37 mm.

Hab. 1 ♀ Tenimber Island, June—July 1892 (W. Doherty).

8. *Elachyophthalma meeki* sp. nov.

♀. Pectus and legs sooty brown; head sooty brown; antennae shafts whitish, pectinations sooty brown; thorax pale golden yellow; abdomen sooty grey-brown, anal tuft white on basal half, pale grey on apical half. Forewing semi-vitreous pale golden yellow, apical one-third densely irrorated with grey scales. Hindwing semi-vitreous pale golden yellow.

Length of forewing, 21 mm.; expanse, 48 mm.

Hab. 1 ♀ Angabunga River, affl. St. Joseph's River, British New Guinea, 6,000 ft. upwards, November 1904—February 1905 (A. S. Meek).

9. *Elachyophthalma semicostalis* sp. nov.

♀. Pectus and legs sooty black-brown; head sooty brown-black; antennae black; thorax and tegulae orange-buff, rest sooty black-brown; abdomen sooty black-brown, anal tuft white. Forewing thinly scaled sooty black-brown, basal half with an olive tinge; basal three-fifths of costal area orange-buff. Hindwings basal two-thirds sooty black-brown, outer two-fifths orange-golden, fringe black-brown. Underside basal three-fifths of forewing obliquely dull orange-golden, outer two-fifths brown-black; hindwing as above, but outer two-thirds heavily dusted with dark scales.

Length of forewing, 22—26 mm.; expanse, 48—58 mm.

Hab. 2 ♀♀, type, Upper Aroa River, British New Guinea, February—April 1903; 1 ♀ Booboomie Aroa River, 2,000 ft., May 1905 (bred from cocoon); 1 ♀ Kumusi River, N.E. British New Guinea, July 1907 (A. S. Meek);—1 ♀ Dorey, Dutch New Guinea, June 1897 (W. Doherty).

The cocoon of this species is most curious; it is flagon-shaped, quite hard, and with a tail-like appendage 11 mm. long and dark brown in colour. It is suspended free in the air by a cord 40 millimetres long attached to the underside of a bamboo leaf.

10. *Elachyophthalma goliathina* sp. nov.

♂. Dark chocolate-brown above ; an indistinct darker zig-zag antemedian line and 2 darker serpentine zigzag postmedian lines more distinct on forewing ; apex of forewing more olive. Hindwing with rufous tinge, abdominal margin on edge with whitish lines.

Length of forewing, 26—28 mm. ; expanse, 56—60 mm.

Hab. 5 ♂♂ Mount Goliath, Central Dutch New Guinea, 5,000 ft., February 1911.

11. *Elachyophthalma tricolor* Feld.

Elachyophthalma tricolor Felder, *Ber. Kais. Ak. Wiss. (Math.—N.W. Class)*, vol. xliii. p. 32 (1861) (Amboina).

6 ♀♀, incl. type, Amboina (Doleschall ex coll. Felder) ; 5 ♀♀ Amboina, August 1892 (W. Doherty).

12. *Elachyophthalma bicolor* (B. Baker).

Diversosexus bicolor Bethune Baker, *Novit. Zool.* vol. xi. p. 403 (1904) (Dinawa) (♀ descr. as ♂ ; Baker's ♀ is a Lymantrid).

The amount of yellow at tornus of hindwings and the width and shape of the median band of forewings varies very much.

5 ♀♀ Milne Bay, British New Guinea, January—October 1899 ; 1 ♀ Upper Aroa River, British New Guinea, March 1903 ; Booboomic Aroa River, 2,000 ft., May 1905 ; 1 ♀ Goodenough Island, November 1896 ; 2 ♀♀ Kumusi River, N.E. British New Guinea, June 1907 (A. S. Meek) ; —3 ♀♀ Hydrographer Mts., N. British New Guinea, 2,500 ft., April—May 1918 (Eichhorn Bros.).

13. *Elachyophthalma melanoleuca* sp. nov.

♀. Legs, pectus, head, antennae, and thorax sooty black ; abdomen sooty black, anal tuft white with bright buff centre. Forewing sooty black, a median band broad, curved, white, reaching from inner margin to just below subcostal nervure. Hindwing sooty black, a large, irregular, white triangular patch extends from the abdominal margin to just above vein 5.

Length of forewings, 25 mm. ; expanse, 55 mm.

Hab. 3 ♀♀ Humboldt Bay, September—October 1892 (W. Doherty).

14. *Elachyophthalma insularum* sp. nov.

♂. Uniform chocolate-rufous above ; sides of abdominal margin of hindwing with oblique white streaks.

Length of forewing, 17 mm. ; expanse, 38 mm.

Hab. 1 ♂ Roa Island, July 1897 (W. Doherty).

15. *Elachyophthalma fergussonis* sp. nov.

♂. Uniform chocolate-brown above ; thorax with a mauve-grey suffusion ; forewings owing to the excavated termen strongly falcate ; hindwing tornus much produced, 3 strong oblique white bands on abdominal margin.

♀. Pectus, legs, head, antennae, and thorax sooty black-grey; abdomen sooty black, anal tuft buff-white below and on sides. Forewing sooty black-grey, a broad creamy white curved band from subcostal nervure to vein 1; area below vein 1 yellow on outer three-fifths. Hindwing basal two-fifths sooty grey-black, outer three-fifths yellow, slightly sprinkled with dark scales; fringe, margin, and outer half of nervures sooty.

Second ♀ has yellow below vein 1 of forewing and outer portion of hindwing much obscured by black scales.

Length of forewing, ♂ 17 mm.; expanse, 39 mm.

Length of forewing, ♀ 26 mm.; expanse, 58 mm.

Hab. 1 ♂, 2 ♀♀ Ferguson Island, December 1894—November 1895 (A. S. Meek).

16. *Elachyophthalma infraluteola* sp. nov.

♀. Pectus, legs, head, and thorax sooty brown-black; abdomen sooty brown-black, anal tuft buff-white on sides. Forewing sooty brown-black above, with a broad curved white band. Hindwing above basal half except costa and base pale golden yellow; outer half, costa, and base sooty brown-black. Below the white band on forewing is much extended.

Length of forewing, 23 mm.; expanse, 51 mm.

Hab. 1 ♀ Humboldt Bay, N. Dutch New Guinea, September—October 1892 (W. Doherty).

17. *Elachyophthalma doreyana* sp. nov.

♂. Uniform rufous-chocolate above, a small yellow half-moon-shaped discocellular stigma in forewing, and white streaks on abdominal margin of hindwing.

♀. Uniform sooty grey-black; a broad white median band on forewing, more even in width and more strongly curved than in *bicolor* B. Baker, ternal half of abdominal margin greenish buff with black band across centre.

Length of forewing, ♂ 17 mm.; expanse, 38 mm.

Length of forewing, ♀ 26 mm.; expanse, 57 mm.

Hab. Dorey, N. Dutch New Guinea, June 1897 (W. Doherty).

Diversosexus aroa B. Baker is not an *Elachyophthalma* at all, but a *Lymantrid* of the genus *Nygmia*.

18. *Elachyophthalma cotanoides* sp. nov.

♀. Pectus rufous-orange; legs black, clothed on inner side with orange hair; antennae brown-black; head and thorax rufous-orange; abdomen rufous-orange, anal tuft lead-blue at base, rest greyish white, centre rufous. Forewing chocolate-rufous; basal three-fifths of costal area orange, nervures golden-yellow washed with rufous on inner four-fifths of wing, a darker rufous and yellow double postmedian band, beyond which nervures broadly golden yellow, a patch of golden buff between veins 2 and 4 on inner side of postmedian band.

Hindwing chocolate-rufous, nervures on inner three-fourths slightly yellow,

a somewhat obsolete postmedian band yellow, beyond which the nervures are strongly golden yellow.

Below both wings chocolate-rufous, nervures strongly yellow.

Length of forewing, 25 mm. ; expanse, 56 mm.

Hab. 2 ♀♀ Upper Setakwa River, Snow Mts., Dutch New Guinea, 2,000—3,000 ft., August 1910 (A. S. Meek).

19. *Elachyophthalma mimiocotana* sp. nov.

♀. Pectus and legs pale rufous washed with buff ; antennae chocolate-rufous ; head and thorax pale rufous ; abdomen pale rufous, a transverse band and anal tuft whitish. Forewing pale rufous, nervures golden buff, a patch occupying most of cell and some indistinct marks below it golden buff, a chocolate-rufous postdiscal band. Hindwing pale rufous nervures and broad postmedian band golden buff.

Length of forewing, 21 mm. ; expanse, 47 mm.

Hab. 1 ♀ Lower Aroa River, British New Guinea, November 1904—March 1905 (A. S. Meek).
